

14.01B.080 Compliance – 25 Decibels (Noise Zone 2)

14.01B.030 Definitions

- A. AIRPORT:** Any area of land or water designed and set aside for the landing and taking off of aircraft and utilized or to be utilized in the interest of the public for such purposes.
- B. AIRPORT NOISE ZONE:** That area which has been identified as being significantly impacted by airport noise.
- C. AIRPORT ADMINISTRATOR OR ADMINISTRATOR:** The Island County Building Official.
- D. ALTERATION:** Any construction which would result in a change in height or lateral dimensions of an existing structure.
- E. CONSTRUCTION:** The erection or alteration of any structure either of a permanent or temporary character.
- F. DAY-NIGHT AVERAGE SOUND LEVEL (Ldn):** A basic measure for quantifying noise exposure, namely: The A-weighted sound level averaged over a 24 hour time period, with a 10 decibel penalty applied to nighttime (10:00 P.M. to 07:00 A.M.) sound levels.
- G. DBA:** The unit of corrected noise level measured in accordance with the “A-weighting scale” which replicates the response characteristics of the ear.
- H. DECIBEL:** A unit for measuring the relative loudness or sound pressure ordinarily detectable by the human ear, the range of which includes about 130 decibels on a scale beginning with 1 for the faintest audible sound.
- I. DEPARTMENT:** Island County Planning and Community Development.
- J. NOISE SENSITIVE AREAS:** Areas in buildings where the normal noise level is low and shall include office areas, classrooms, areas where the public is received and breakrooms.
- K. NONCONFORMING STRUCTURE:** Any structure, which was lawfully in existence prior to the enactment of these regulations and which does not conform to these regulations.
- L. PERSON:** Any individual, firm, co-partnership, corporation, company, association, joint-stock association, or body politic, and includes any trustee, receiver, assignee or their similar representative thereof.
- M. RUNWAY:** A defined area on an airport prepared for landing and takeoff of aircraft along its length.
- N. SOUND TRANSMISSION CLASS (STC):** A single number rating for describing sound transmission loss of a wall, partition, window or door.
- O. STRUCTURE:** Any object constructed or installed by man, including but not limited to houses and commercial buildings, designed for human occupancy.

All new structures and alterations to existing structures shall conform to the following minimum standard unless exempted in this ordinance.

14.01B.060 Design Requirements -

The criteria of these sections establish the minimum requirements for acoustic design of the exterior envelope of buildings and for heating, ventilation and air conditioning (HVAC) systems and its parts. The provisions of this ordinance are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this ordinance. These requirements shall apply to all buildings for human occupancy in accordance with ICC 14.01B.050.

14.01B.070 Air Leakage for All Buildings

- A. The requirements of this section shall apply to the design of the exterior envelope of all buildings designed for human occupancy. The requirements of this section are not applicable to the separation of interior spaces from each other.
- B. The following locations shall be sealed, caulked, gasketed, or weather-stripped to limit or eliminate air leakage:
 - 1. Exterior joints around windows and door frames between the window or door frame and the framing;
 - 2. Openings between walls and foundations;
 - 3. Between the wall sole plate and the rough flooring;
 - 4. Openings at penetrations of utility services through walls, floor, and ceilings;
 - 5. Between wall panels at corners; and
 - 6. All other such openings in the building envelope.
- C. Through the wall, floor, or roof/ceiling penetrations not specifically addressed in these sections shall be designed to limit sound transmission and shall have the same average laboratory sound transmission classification as required for doors.

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Compliance with Section 14.01B.080 “A” through “F” shall be deemed to meet requirements for a minimum noise level reduction (NLR) of 25 decibels.

A. Exterior Walls

- 1. Exterior walls, other than as described in this section, shall have a laboratory sound transmission class rating of at least STC- 30; or
- 2. Masonry walls having a weight of at least 25 pounds per square foot do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered, or 5/8” GWB on furring.
- 3. Stud walls shall be at least 4 inches in nominal depth and shall be finished on the outside with solid sheathing under an approved exterior wall finish.
 - a) Interior surface of the exterior walls shall be of gypsum board or plaster at least ½ inch thick, installed on the studs.

- b) Continuous composition board, plywood or gypsum board sheathing at least ½ inch thick or equivalent shall cover the exterior side of the wall studs.
- c) Exterior sheathing panels shall be covered with an approved "house wrap."
- d) Insulation material of at least R-13 shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs. Insulation shall be glass fiber, mineral wool, or foam plastic.

B. Exterior Windows

- 1. Windows other than as described in this section shall have a laboratory sound transmission class rating of STC- 28 or shall be at least 3/16" thick.
- 2. All openable windows shall be weather-stripped and airtight when closed so as to conform to an air infiltration test not to exceed 0.5 cubic foot per minute per foot of crack length in accordance with ASTM E-283-65-T.
- 3. Glass shall be sealed in an airtight manner with a non-hardening sealant or a soft elastomer gasket or gasket tape.
- 4. The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal Specifications: TT-S-00227, TT-S-0230 or TT-S-00153.

C. Exterior Doors

- 1. Doors other than as described in this section shall have a laboratory sound transmission class rating of at least STC-26 or all exterior side-hinged doors shall be solid core wood or insulated hollow metal at least 1 ¾" thick and shall be fully weather-stripped.
- 2. Exterior sliding doors shall be weather-stripped with an efficient airtight gasket system with performance as specified in Section 14.01B.080.B.3. The glass in the sliding doors shall be at least 3/16" thick.
- 3. Glass, over two square feet in area, in doors shall be sealed in an airtight sealant or in a soft elastomer gasket or glazing tape.
- 4. The perimeter of door frames shall be sealed airtight to the exterior wall construction as described in Section 14.01B.080.B.5.

D. Roofs

- 1. Combined roof and ceiling construction other than described in this section and Section 14.01B.080.E shall have a laboratory sound transmission class rating of at least STC-39 or with an attic or rafter space at least 6 inches deep, and with a ceiling below, the roof shall consist of ½ inch composition board, plywood or gypsum board sheathing topped by roofing as required.
- 2. Open beam roof construction shall follow the energy insulation standard method for batt insulation; a ventilated air space is required.

3. Window or dome skylights shall have a laboratory sound transmission class rating of at least STC-33.

E. Ceilings

1. Gypsum board or plaster ceilings at least $\frac{1}{2}$ inch thick shall be provided where required by Section 14.01B.080.D above. Ceilings shall be substantially airtight with a minimum of penetrations.
2. Glass fiber or mineral wool insulation, or foam plastic, at least R-19 shall be provided above the ceiling between joists.

F. Ventilation

1. A ventilation system shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors or other openings to the exterior.
2. The inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 26 gauge steel, which shall be lined with 1 inch thick coated glass fiber, and shall be at least five feet long with one 90 degree bend. Approved wall ports or ventilation integrated with the forced air heating system will be allowed.
3. Gravity vent openings in attics shall be as close to code minimum in number and size, as practical.
4. Bathroom, laundry and similar exhaust ducts connecting the interior space to the outdoors, shall contain at least a five foot length of internal sound-absorbing duct lining. Exhaust ducts less than five feet in length shall be fully lined and shall also meet the provisions of Section 14.01B.070.C. Each duct shall be provided with a bend in the duct such that there is no direct line-of-sight through the duct from the venting cross-section. Duct lining shall be coated glass fiber duct liner at least 1 inch thick. Dryer vents and ducts from kitchen range hoods will be exempt.
5. All exhaust ducts shall be equipped with back draft dampers.
6. Fireplaces shall be provided with well-fitted dampers and tightly fitting glass or metal doors.